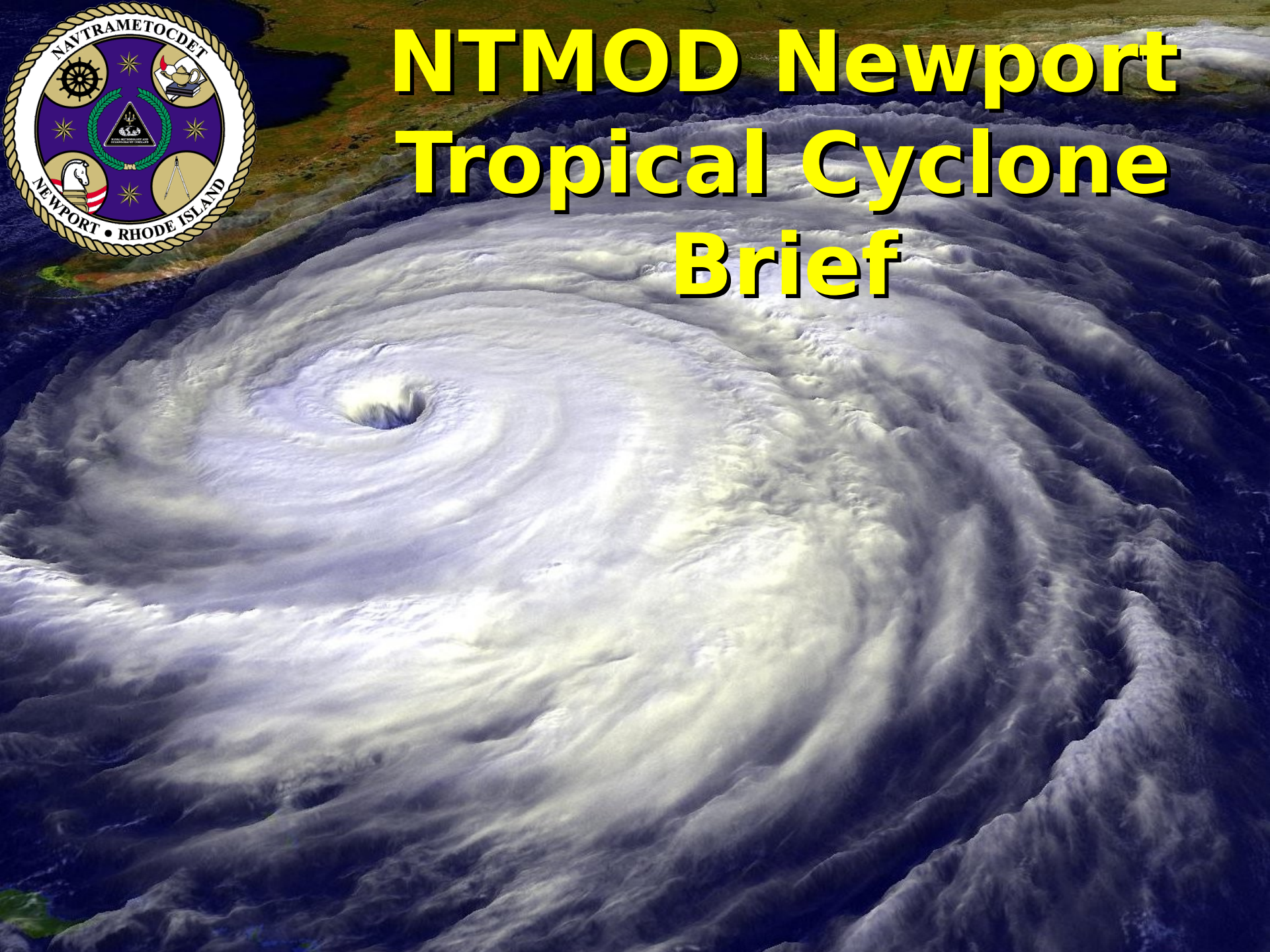


NTMOD Newport Tropical Cyclone Brief



OVERVIEW

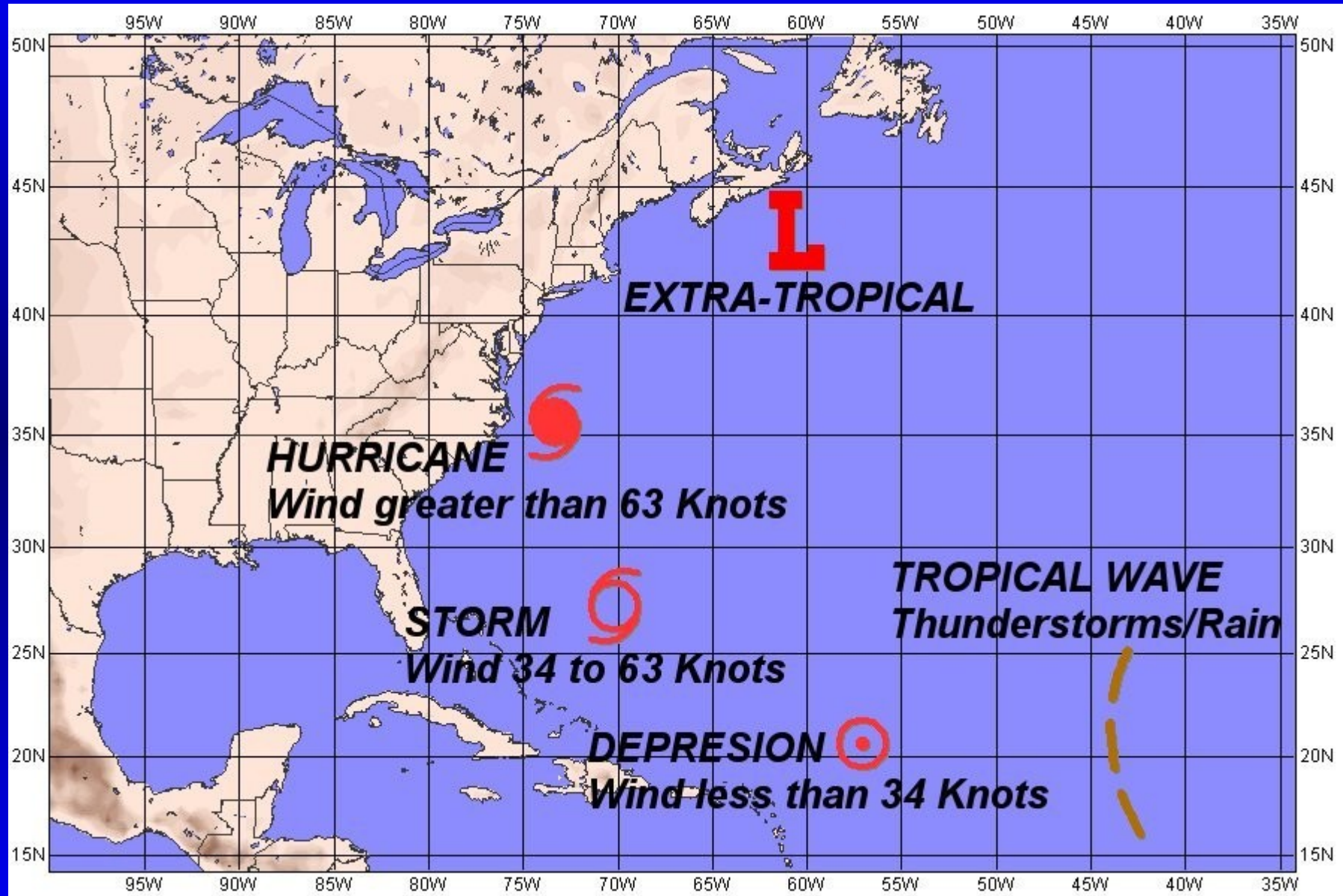
METOC DET NEWPORT

- ***TROPICAL CYCLONE
CHARACTERISTICS***
- ***CLIMATOLOGY***
- ***STORM SURGE***
- ***WARNINGS / CONDITIONS OF
READINESS***
- ***PREPARATION***

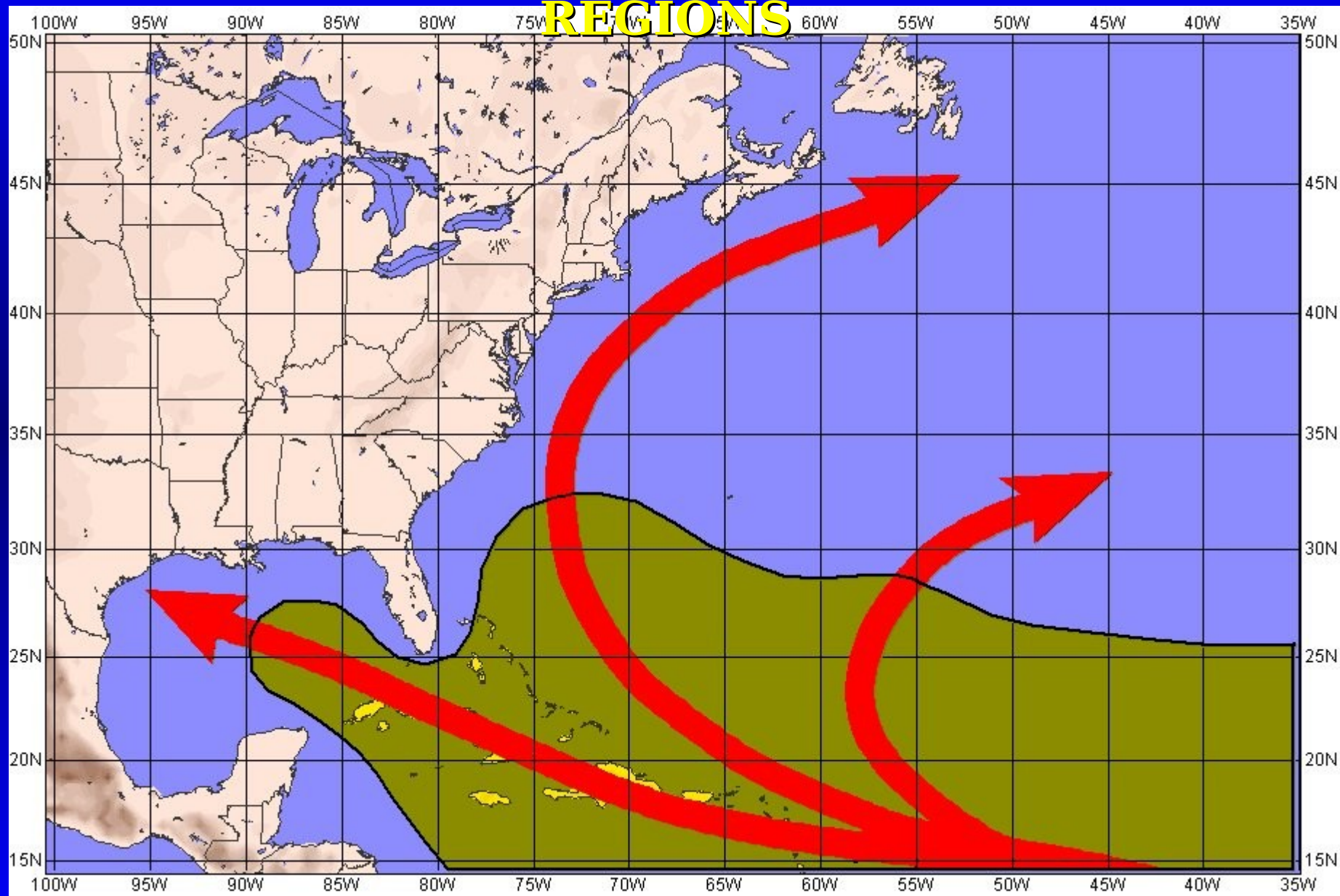
TROPICAL CYCLONE CHARACTERISTICS

- ***WARM WATER (>80 DEG F)***
- ***ORGANIZED CIRCULATION***
- ***MOVEMENT W (10-15 KTS) -- N (25-45 KTS)***
- ***CLASSIFICATION***
- | | |
|--------------------------|---------------------------|
| <i>DEPRESSION</i> | <i><34KTS</i> |
| <i>STORM</i> | <i>34 - 63 KTS</i> |
| <i>HURRICANE</i> | <i>64+ KTS</i> |

LIFE CYCLE of Tropical Systems



TROPICAL CYCLONE PATHS AND SOURCE REGIONS



SAFFIR-SIMPSON SCALE

CATAGORY	WINDS (KTS)	SURGE (FT)	DAMAGE
1 MINOR	64-82	4-5	
2 TREES, ROOFS MOBILE HOMES	83-95	6-8	
3 STRUCTURAL DAMAGE	96-113	9-12	
4 SIGNS, WINDOWS EXTENSIVE DAMAGE	114-135	13-18	

1
MINOR

64-82

4-5

2
TREES, ROOFS
MOBILE HOMES

83-95

6-8

3
STRUCTURAL
DAMAGE

96-113

9-12

4
SIGNS, WINDOWS

114-135

13-18

EXTENSIVE DAMAGE

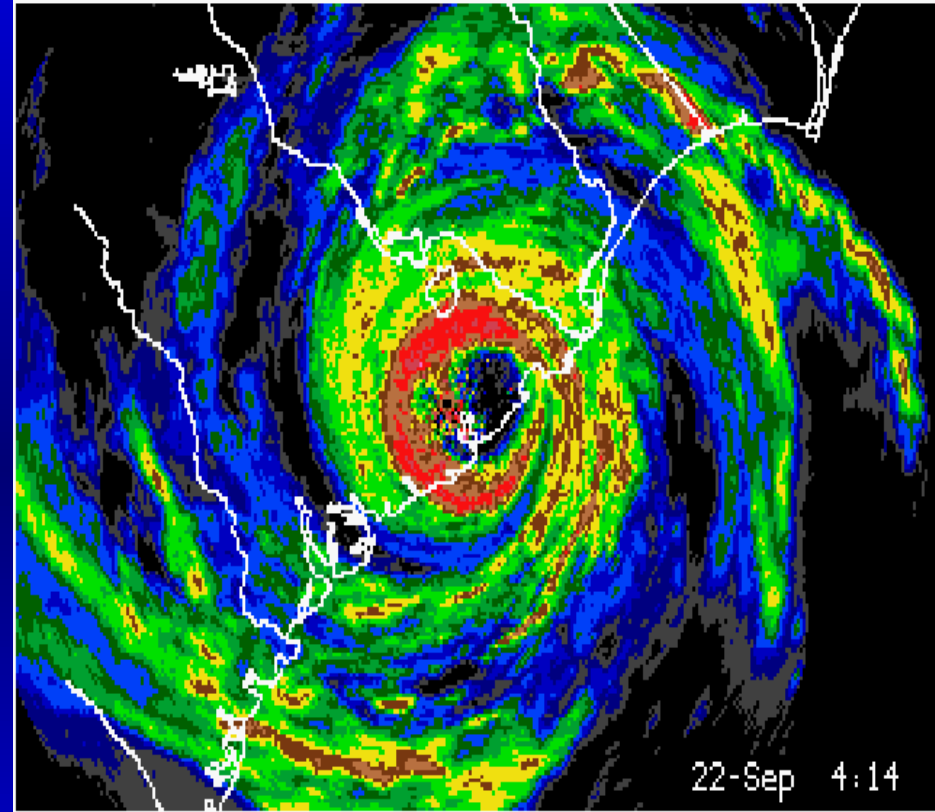
NEWPORT TROPICAL CYCLONE

THREAT CLIMATOLOGY

- ***THREAT SEASON ~~JUNE - NOVEMBER~~***
***ON AVERAGE 1 TROPICAL CYCLONE PASSES WITH 180
NM***
- ***OF ALL TROPICAL CYCLONES THREATENING
NEWPORT
BTWN 1886 AND 1979, 85% OCCURRED IN THE
MONTHS
OF **AUGUST THRU OCTOBER*****
- ***MAJOR THREAT DIRECTION IS FROM THE SOUTH
AND SOUTHWEST.***
- ***FROM 1936 TO 1996, 34 HURRICANES OR TROPICAL
STORMS
AFFECTED RHODE ISLAND***

Storm Surge

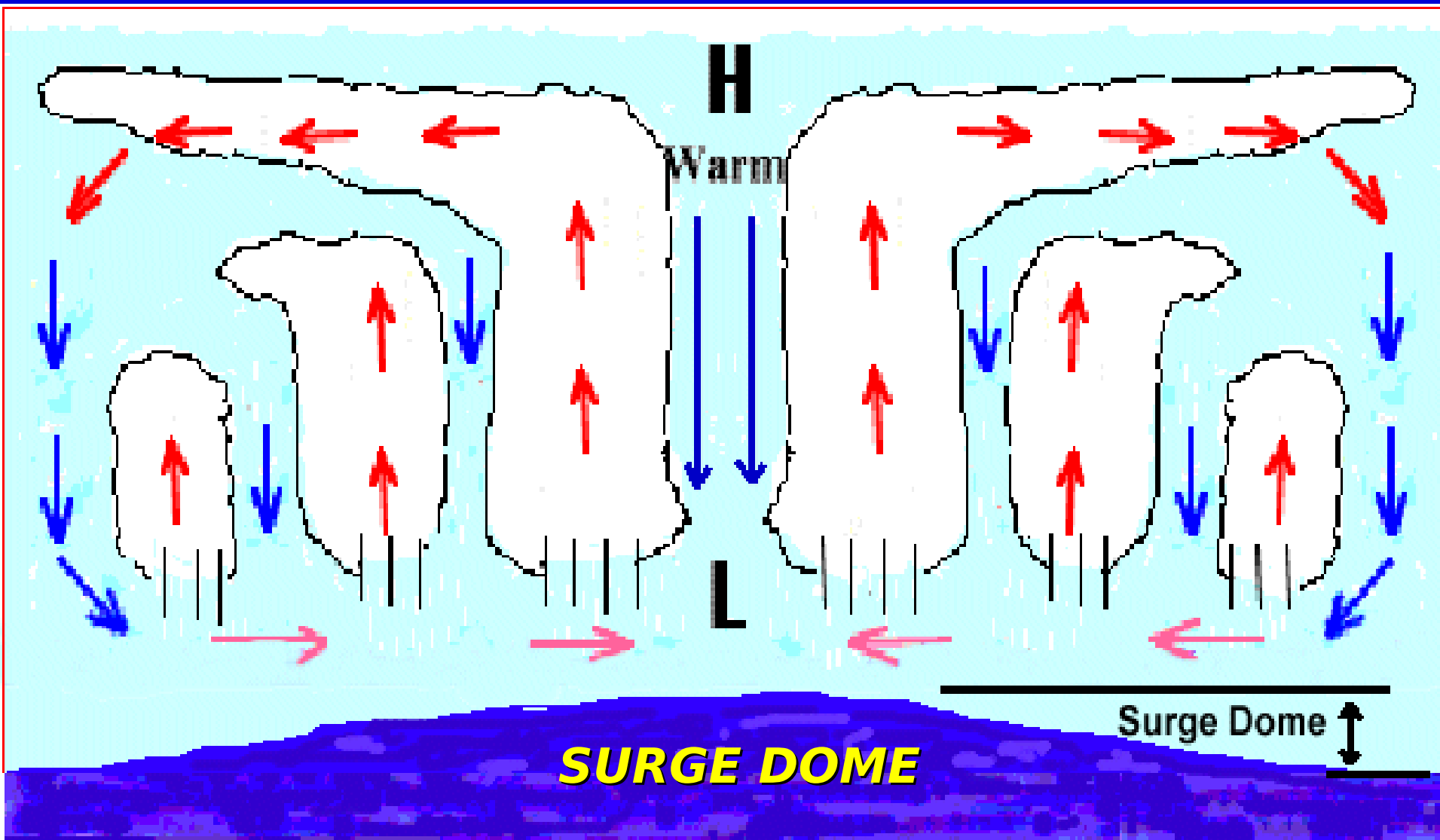
Abnormal rise of the sea in advance/with the cyclone formed by the cyclone's onshore winds to the right of the cyclone center and low pressure near the cyclone's center.
"WALL OF WATER"



STORM SURGE

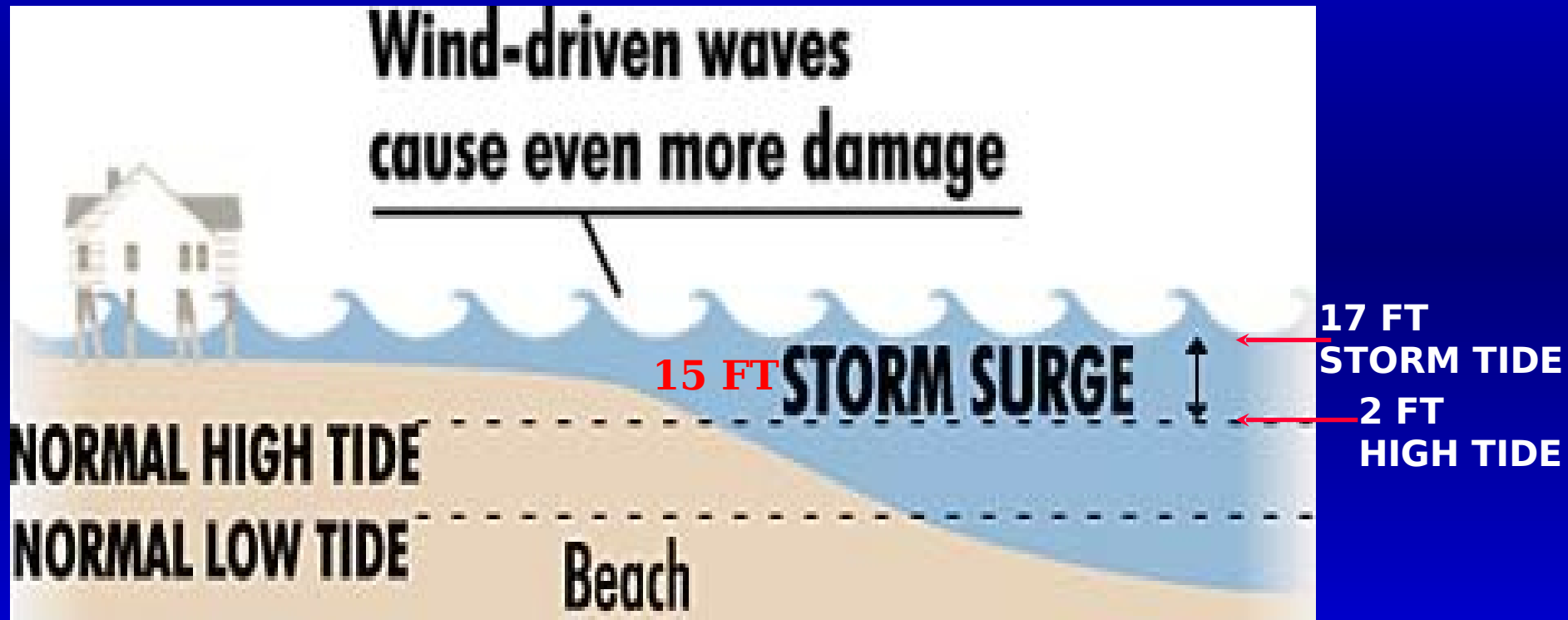
- ***STORM SURGE - COMBINED EFFECT OF HIGH WATER AND HIGH WINDS***
- ***CONSIDERATIONS:***
TRACK OF STORM LEFT OR RIGHT OF NEWPORT
CLOSEST POINT OF APPROACH (CPA) TO NEWPORT
TIME OF HIGH/LOW TIDE
- ***PROBLEMS:***
FLOODING/BEACH EROSION
STRUCTURAL DAMAGE
SMALL CRAFT AT MARINA

STORM SURGE



STORM SURGE

Category IV Hurricane (114-135 KTS/13 to 18 FT) surge



PAST SIGNIFICANT STORM SURGE EFFECTING NEWPORT

<u>DATE</u>	<u>STORM</u>	<u>WTR LEVEL ABV MSL (NPT)</u>
SEP 1938	HURRICANE	10.8
AUG 1954	CAROL	9.8
SEP 1944	HURRICANE	8.0
SEP 1985	GLORIA	6.6
AUG 1991	BOB	6.5

















TROPICAL WARNINGS

Naval Atlantic Meteorology and Oceanography Center(NLMOC) disseminates Warning Message issued by National Hurricane Center (NHC) via AUTODIN and NIPRNET/INTERNET. Warnings are issued every 6 hours.

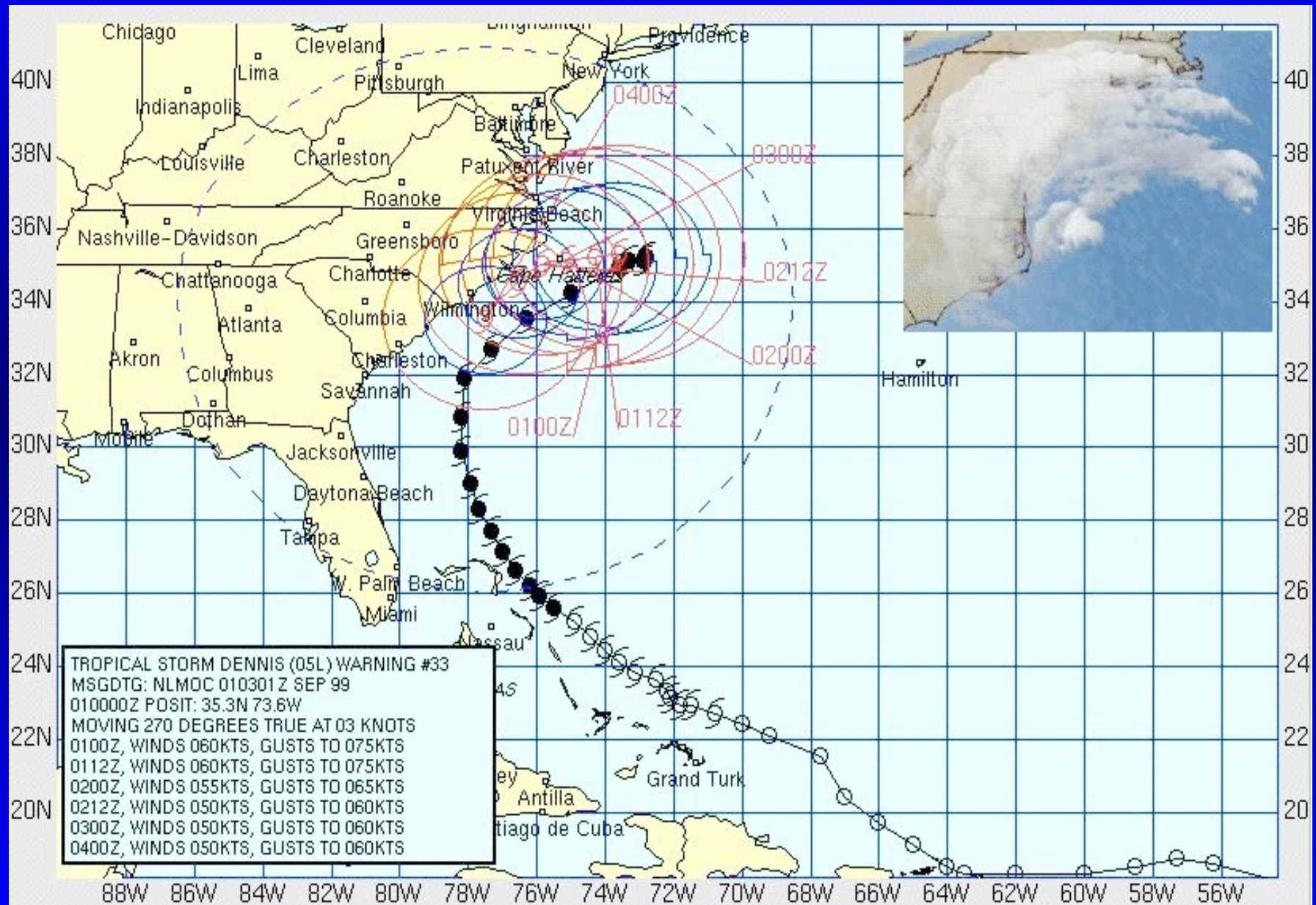
NTMOD: [Http://www.nwc.navy.mil/weather](http://www.nwc.navy.mil/weather)

NLMOC: [Https://www.nlmoc.navy.mil](https://www.nlmoc.navy.mil)

NHC: [Http://www.nhc.noaa.gov](http://www.nhc.noaa.gov)

Additionally NLMOC disseminates a Daily Tropical Weather Discussions for the Atlantic.

EXAMPLE Tropical Storm Plot



CONDITIONS OF READINESS

- **CONDITIONS BASED ON ONSET OF WINDS > 50KTS**
 - ♦ **CONDITION V - POSSIBLE WITHIN 96 HRS**
 - ♦ **CONDITION IV - POSSIBLE WITHIN 72 HRS**
 - ♦ **CONDITION III - POSSIBLE WITHIN 48 HRS**
 - ♦ **CONDITION II - ANTICIPATED WITHIN 24 HRS**
 - ♦ **CONDITION I - ANTICIPATED WITHIN 12 HRS**



1938 Hurricane

- ***Winds: 121 mph gusts to 186 mph***
- ***Storm Surge: Narragansett Bay
12-15 foot
Downtown Providence submerged
New Bedford submerged***
- ***Widespread flooding due to storm
surge & heavy rains.***

1938 Hurricane

➤ ***Deaths: 564 Injuries:
>1700***

➤ ***Boating Impact:***

Destroyed: 2,600

Damaged: 3,300

➤ ***Homes/Buildings***

Destroyed: 8900

Damaged: 15,000

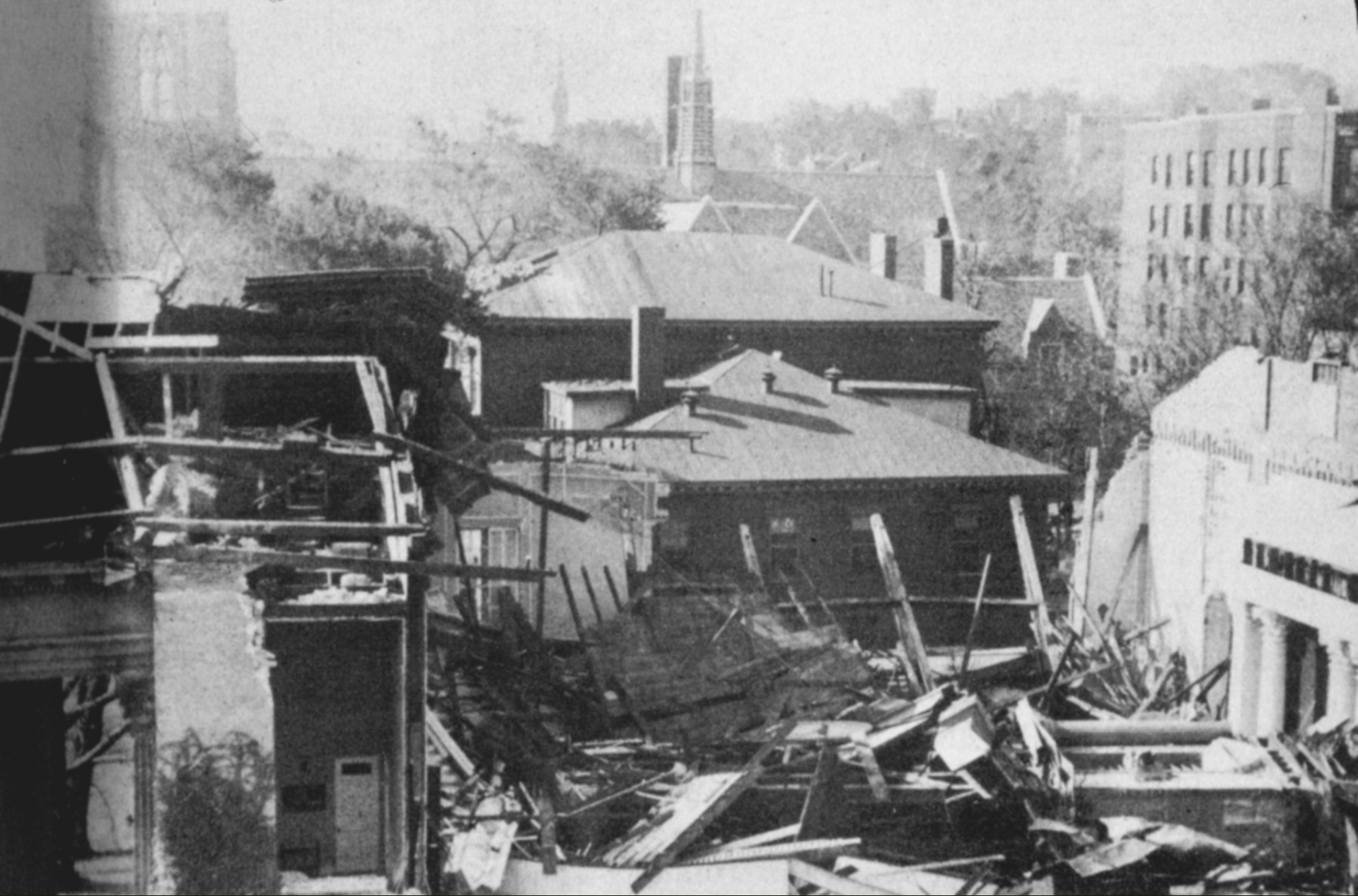


**All that remains of a beachfront
home at Third Beach.
Newport, Rhode Island**





Island Park, Rhode Island was destroyed by a breaker with a height of 30 to 40 feet.



Remains of the steeple of the First Unitarian Church in Worcester, Massachusetts, after the 1906 San Francisco earthquake.



**Island Park was destroyed by a breaker with a reported height
A sturdy washing machine is all that remains of a destroyed ho**

Preparations - Before Storm

- **Plan for Evacuation**
 - Plan Route**
 - Plan for Emergency Shelter**
- **Have Disaster supplies on hand**
 - Flashlight/batteries**
 - Battery operated radio**
 - First aid kit**
 - Food/water**
 - Can opener (non electric)**
 - Medicines**
 - Cash/credit cards**
- **Flood Insurance**

During Hurricane Watch

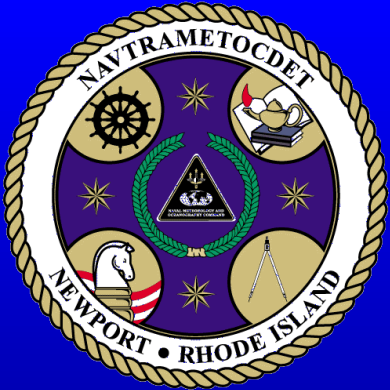
- **Check supplies**
- **Fuel car**
- **Secure outdoor missile hazards (lawn furniture, etc...)**
- **Turn refrigerator/freezer to coldest settings and leave closed**
- **Store drinking water in clean bathtubs, jugs and bottles**

During Hurricane Warning

- Listen for official updates/instructions
- Store valuables/personal papers in a waterproof container
- Stay inside away from windows, skylight and glass doors.
- Keep flashlights/extra batteries handy.
DO NOT USE CANDLES/OPEN FLAMES!!
- If power is lost, turn off appliances to reduce surge when power is restored

Evacuation

- **If officials indicate evacuation is necessary.....LEAVE**
- **Leave ASAP, avoiding flooded roads**
- **Bring emergency supplies and warm clothing**
- **Lock up home and leave.**
- **No pets at shelters**



Questions?

NTMOD Newport

www.nwc.navy.mil/we

841-4390/2356

